

Aluminum and Its Alloys

UDC: 541.133+546.621

DELMARSKIY, Yu. K., MAKOGON, V. F., CHETVERIKOV, A. V., and ZHICAYLO, A. Ya.,
Institute of General and Inorganic Chemistry, Academy of Sciences Ukrainian
SSR

"Formation of Slime on an Aluminum Anode in Chloride Melts"

Moscow, Zashchita Metallov, Vol. 6, no. 4, Jul-Aug 70, pp 459-461

Abstract: In the electrodeposition of aluminum from a $2\text{AlCl}_3\text{-NaCl}$ salt mixture it was observed that the surface of the soluble aluminum anode, under continuous service, became coated with a heavy layer of black slime, and the anode current yield exceeded 100% liberating gas bubbles. The objective of this study was to determine the causes of slime formation as well as its effect on the cathode current yield. Microscopic examination of the slime collected from the anode and rinsed with alcohol revealed a mass of glittering particles basically comprising aluminum. In a chloride melt the anode current density is the governing factor. At 1 amp/dm^2 , the anode current yield recalculated to Al^{3+} considerably exceeds 100% and the mean ion valence of aluminum computed from loss in weight of the anode is below three. The anode dissolves evenly,

1/2

DELIMARSKIY, YU. K., et al, Zashchita Metallov, Vol 6, No. 4, Jul-Aug 70,
pp 459-461

the slime is finely disperse. In this case, the deviation from Faraday's law is due to Al^+ formation. An entirely different picture was observed at an anode current density of 15 amp/dm^2 . The powder on the anode is abundant, the anode current yield hardly exceeds the theoretical, and the mean calculated valence of aluminum is close to three. The slime structure is clearly defined. The anode dissolves unevenly, and its surface erosion is similar to intergranular failure. As for the effect of anodic current density on the cathodic current yield, it is suggested that in electrodeposition of aluminum from chloride melts care must be exercised in selecting along with the temperature, cathode current density, and inter-electrode space, also the proper anode current density: it must differ little from the optimum cathode current density.

2/2

1/2 010 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--IMPEDANCE STUDY OF POTASSIUM NITRATE SODIUM NITRATE, POTASSIUM
NITRATE POTASSIUM DICHROMATE POTASSIUM NITRATE THALLIUM CHLORIDE MELTS
AUTHOR-(03)-DELMARSKIY, YU.K., PRISYAZHNYI, V.D., PANOVA, E.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(6), 1663-6

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BINARY FLUID SYSTEM, MOLTEN CHLORIDE, POTASSIUM NITRATE,
NITRITE, FUSED SALT, THALLIUM CHLORIDE, SOLUTION CONCENTRATION, ELECTRIC
CAPACITANCE, POTASSIUM CHROMATE, SODIUM NITRATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1392

STEP NO--UR/0078/70/015/006/1663/1666

CIRC ACCESSION NO--AP0135066

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0135066

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CAPACITANCE OF BINARY SYSTEMS OF KNO SUB3 WITH NANO SUB3, K SUB2 CR SUB2 O SUB7, OR TLCL WAS MEASURED AGAINST PT ELECTRODE IN AN A.C. AND DIAGRAMS OF CAPACITANCE VS. CONC. ARE PRESENTED. THE DIAGRAMS LOOK ANALOGOUS TO THOSE OBTAINED BY USING SURFACE TENSION DATA AND, AT LOW FREQUENCY A.C., DEPICTED THE PRESENCE OF CHEM. REACTIONS IN THE SYSTEMS. FACILITY: INST. ODSHCH. NEORG. KHIM., KIEV, USSR.

UNCLASSIFIED

USSR

UDC: 53.087.92:621.317.39

DELIBETOV, V. A., Engineer

"Some Ways of Reducing the Dimensions and Increasing the Vibration-Proof Quality of Power-Compensated Electromechanical Sensors"

Moscow, Pribory i sistemy upravleniya, No 6, 1972, pp 23-24

Abstract: Electromechanical sensors with power compensation are widely used to obtain primary information of various parameters in technological processes. Although these sensors are excellent in many respects, they are too large and heavy, and are not as resistant to vibration as they should be. The purpose of this article is to investigate various methods of miniaturizing the sensors and improving their stability to vibration. Reduction of their dimensions is hindered chiefly by the reduction of the pull of their inverse feedback mechanisms with a simultaneous increase in the stiffness of the elastic sensitive elements. The author demonstrates that the inverse feedback mechanism can be made more efficient by using polarized electromagnets instead of ordinary mechanisms of the magnetoelectric type. He also shows how negative stiffness can be introduced into the sensitive elements to reduce the vulnerability of the sensor to vibration and noise.

1/1

1/2 025 UNCLASSIFIED PROCESSING DATE--20NDV70
TITLE--COEXISTENCE OF IMMISCIBLE LIQUIDS AT HIGH TEMPERATURES IN THE
SODIUM FLUORIDE ALBITE GLASS AB SYSTEM -U-
AUTHOR-(02)-DELITSIN, J.M., LELENTYEV, B.N.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(4), 790-3
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--GLASS COMPOSITION, LITHIUM FLUORIDE, SODIUM COMPOUND, FLUID
STATE, HIGH TEMPERATURE EFFECT, ALUMINUM OXIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/0016 STEP NO--UR/0363/70/006/004/0790/0793
CIRC ACCESSION NO--AP0132316
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132316

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ALBITE GLASS NAF SYSTEM IS A PARTIAL SECTION OF A MULTICOMPONENT SYSTEM IN WHICH THERE IS A WIDE RANGE OF IMMISCIBLE LIQ. PHASES. THE LIQUIDUS LINE HAS A MIN. AT 880DEGREES, CORRESPONDING TO A COMPN. OF 14 WT. PERCENT NAF PLUS 86 WT. PERCENT AB. INTRODUCTION OF AL SUB2 O SUB3 INTO A SYSTEM OF TYPE M PRIME POSITIVE SUB2 O SIO SUB2 M PRIME F LEADS TO THE APPEARANCE OF IMMISCIBILITY IN THE FUSED STATE. THE EFFECT OF STRUCTURAL INCOMPATIBILITY OF THE CATION ANION PARTS OF THE COMPONENTS ON THE IMMISCIBILITY REGION IN THE ALBITE GLASS LIF NAF SYSTEM IS DISCUSSED.

FACILITY: GEOL. INST., APATITY, USSR.

UNCLASSIFIED

1/2 008 UNCLASSIFIED
TITLE--SATURATED ALIPHATIC ALDEHYDES -U-

PROCESSING DATE--04DEC70

AUTHOR--(05)-ALEKSEYEVA, K.A., DELNIK, V.B., YEFIMOVA, N.I., RUDKOVSKIY,
D.M., TRIFEL, A.G.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 265,102
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--09MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ALIPHATIC ALDEHYDE, ORGANIC SYNTHESIS, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/1759

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0136999

UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AA0136999

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SATD. ALIPHATIC ALDEHYDES ARE
PREPD. BY CONDENSING LOWER ALDEHYDES OVER CO NAPHTHENATE OR STEARATE,
AND HYDROGENATING THE UNSATD. ALDEHYDES OVER THE SAME SALTS WITH
SYNTHESIS GAS (CO-H SUB2 1:1) AT 100-80DEGREES TO 150-250 ATM.

UNCLASSIFIED

USSR

UDC: 511.444.2+548.1

DELONE, B. N., Corresponding Member of the Academy of Sciences of the USSR,
GALIULIN, R. V., DOLBILIN, N. P., ZALGALLER, V. A., SHTOGRIN, M. I., Mathe-
matics Institute imeni V. A. Steklov, Academy of Sciences of the USSR, Moscow

"On the Three Successive Minima of a Three-Dimensional Lattice"

Moscow, Doklady Akademii Nauk SSSR, Vol 209, No 1, Mar/Apr 73, pp 25-28

Abstract: Let OA be the shortest vector of the three-dimensional lattice Λ , OB -- the shortest vector of Λ not parallel to OA , and OC -- the shortest vector of Λ not parallel to plane OAB . Three such vectors are called the three successive minima of Λ , and the parallelepiped Π constructed on these vectors is called a reduced parallelepiped.

Theorem 1. The reduced parallelepiped Π is primitive (empty).

This theorem was first geometrically proved by Dirichlet in 1848.

This proof has always seemed somewhat complicated to crystallographers, and therefore N. V. Belov proposed a new proof in 1951. In this paper, the authors offer a still simpler proof, and propose an algorithm for reducing three successive minima to a single parallelepiped.

1/1

USSR

BEREZHETSKAYA, N. K., VORONOV, G. S., DELONE, G. A., DELONE, N. B. and PISKOVA, G. K., Physics Institute imeni P. N. Lebedev, Academy of Sciences USSR

"Effect of a Strong Electromagnetic Field of Optical Frequency on the Hydrogen Molecule"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 58, No 3, Mar 70, pp 753-759

Abstract: An experimental study of the effect of a strong electromagnetic field on the excitation, ionization, and dissociation of the hydrogen molecule is presented. The radiation source was a neodymium laser with a quantum energy of 1.18 eV and wavelength of 1.06 μ . In this case, four quanta were required for the dissociation of the hydrogen molecule and fourteen quanta for ionization. This quantum energy was considerably less than the ionization and dissociation potentials of the molecule. It was found that for a field strength of $E \approx 5 \cdot 10^7$ v/cm there basically occurs ionization of the molecule with the formation of an H_2^+ ion ($H_2 + 14h\nu \rightarrow H_2^+ + e$) and not dissociation ($H_2 + 5h\nu \rightarrow H + H$). It was found that molecular ions $N(H^+)/N(H^+) \sim 10^3$ are formed principally; the probability for the formation of H_2^+ ions for a field strength $E = 10^{7.8 \pm 0.15}$ v/cm is equal to $W(H_2^+) = 10^{7.8 \pm 1.0} \text{ sec}^{-1}$; for a given field strength the dependence of $1/2$

USSR

BEREZHETSKAYA, N. K., et al., Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki,
Vol 58, No 3, Mar 70, pp 753-759

the probability of molecular ion formation on field strength has the form

$$W(H_2^+) = AE^{2K} \text{ for } K = 10.5 \pm 2.8.$$

The need for further experimental and theoretical work to describe the effect of
a strong electromagnetic field on molecules is emphasized.

2/2

Acc. Nr: **1P0043768**

Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy
Fiziki, 1970, Vol 58, Nr 3, pp 753-759

EFFECT OF A STRONG OPTICAL FREQUENCY ELECTROMAGNETIC
FIELD ON THE HYDROGEN MOLECULE

N. K. Berezheiskaya, G. S. Voronov, G. A. Delone,
N. B. Delone, G. K. Piskova

The radiation of Nd glass laser the quantum energy of which ($\hbar\omega = 1.18$ eV) is much less than the potentials of ionization and dissociation are was employed. The strong electromagnetic field action on the H_2 molecule was investigated experimentally. It has been found that for the field strength $E = 5.10^7$ V/cm the multifoton ionisation process $H_2 + 14 \hbar\omega \rightarrow H_2^+ + e$ has far greater probability than the process of multiphoton dissociation $H_2 + 5 \hbar\omega \rightarrow H + H$. The value of multiphoton ionisation probability and its dependence on the light intensity has been measured.

///

REEL/FRA
19770175

2.1. Feb

Acc. Nr: 1P0043768-NB. DELONE Ref. Code: UR 0056 7PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy
Fiziki, 1970, Vol 58, Nr 3, pp 753-759EFFECT OF A STRONG OPTICAL FREQUENCY ELECTROMAGNETIC
FIELD ON THE HYDROGEN MOLECULEN. K. Bereshetskaya, G. S. Voronov, G. A. Delone
N. B. Delone, G. K. Piskova

The radiation of Nd glass laser the quantum energy of which ($\hbar\omega = 1.18$ eV) is much less than the potentials of ionization and dissociation was employed. The strong electromagnetic field action on the H_2 molecule was investigated experimentally. It has been found that for the field strength $E = 5.10^7$ V/cm the multifoton ionisation process $H_2 + 14 \hbar\omega \rightarrow H_2^+ + e$ has far greater probability than the process of multiphoton dissociation $H_2 + 5 \hbar\omega \rightarrow H + H$. The value of multiphoton ionisation probability and its dependence on the light intensity has been measured.

111
REEL/FRA
19770175 2, 7ddh

USSR

BEREZHETSKAYA, N. K., VORONOV, G. S., DELONE, G. A., ~~DELONE, N. P.~~ and
PISKOVA, G. K., Physics Institute imeni P. N. Lebedev, Academy of Sciences USSR

"Effect of a Strong Electromagnetic Field of Optical Frequency on the Hydrogen Molecule"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 58, No 3, Mar 70, pp 753-759

Abstract: An experimental study of the effect of a strong electromagnetic field on the excitation, ionization, and dissociation of the hydrogen molecule is presented. The radiation source was a neodymium laser with a quantum energy of 1.18 eV and wavelength of 1.06μ . In this case, four quanta were required for the dissociation of the hydrogen molecule and fourteen quanta for ionization. This quantum energy was considerably less than the ionization and dissociation potentials of the molecule. It was found that for a field strength of $E \approx 5 \cdot 10^7$ V/cm there basically occurs ionization of the molecule with the formation of an H_2^+ ion ($H_2 + 14h\nu \rightarrow H_2^+ + e$) and not dissociation ($H_2 + 5h\nu \rightarrow H + H$). It was found that molecular ions $N(H^+)/N(H^+) \sim 10^3$ are formed principally; the probability for the formation of H_2^+ ions for a field strength $E = 10^{7.8 \pm 0.15}$ V/cm is equal to $W(H_2^+) = 10^{7.8 \pm 1.0} \text{ sec}^{-1}$; for a given field strength the dependence of $1/2$

USSR

BEREZHETSKAYA, N. K., et al., Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 58, No 3, Mar 70, pp 753-759

the probability of molecular ion formation on field strength has the form

$$W(H_2^+) = AE^{2K} \text{ for } K = 10.5 \pm 2.8.$$

The need for further experimental and theoretical work to describe the effect of a strong electromagnetic field on molecules is emphasized.

1/2 048 UNCLASSIFIED
TITLE--MULTIPHOTON IONIZATION OF ATOMS -U- PROCESSING DATE--27NOV70
AUTHOR--(02)-DELONE, N.B., KELDYSH, L.V.
COUNTRY OF INFO--USSR
SOURCE--NP 18235 1970. 38 P. DEP. CFSTI
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS
TOPIC TAGS--IONIZATION, ATOM, ELECTROMAGNETIC FIELD, PHOTON, LASER

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/1571 STEP NO--UR/0000/70/000/000/0038/0038
CIRC ACCESSION NO--AT0127067
UNCLASSIFIED

2/2 048

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0127067

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RECENTLY DISCOVERED NEW PROCESS LEADING TO THE IONIZATION OF ATOMS BY AN ELECTROMAGNETIC FIELD, THE MULTIPHOTON IONIZATION, IS REVIEWED. IN THIS CASE, IONIZATION OCCURS AS THE RESULT OF THE ABSORPTION OF PHOTONS BY ATOMIC ELECTRONS; THE ENERGY OF THESE PHOTONS IS MUCH LOWER THAN THE IONIZATION POTENTIAL OF THE ATOM. THE REQUIRED HIGH INTENSITY MONOCHROMATIC RADIATION MAY BE OBTAINED ONLY BY THE USE OF LASERS. THE PROCESS WAS FIRST OBSERVED IN 1965 BY ONE OF THE AUTHORS IN THE CASE OF THE IONIZATION OF XENON ATOMS AND HYDROGEN MOLECULES BY THE RADIATION EMITTED BY A RUBY LASER. THE STRONG RADIATION FIELD NEEDED TO OBSERVE THE EFFECT NOT ONLY INDUCES ELECTRON TRANSITIONS FROM ONE STAGE TO ANOTHER BUT ALSO CHANGES THESE STATES. THE PROBABILITY OF THE MULTIPHOTON IONIZATION OF AN ATOM DEPENDS ON THE TYPE OF POLARIZATION OF THE RADIATION AND THE ELLIPTICITY OF THE SYSTEM. THE THEORETICAL EXPLANATION IS BASED ON THE HIGHER ORDER PERTURBATION THEORY, OR ON THE RESONANCE EXCITATION OF AN INTERMEDIATE LEVEL. THE EXPERIMENTAL WORK REQUIRES EITHER A HIGH FIELD VOLTAGE OR A HIGH SPECIFICITY OF THE INDIVIDUAL IONIZATION RELATED TO THE ABSORPTION PROCESSES. FACILITY: AKADEMIYA NAUK SSSR, MOSCOW. INSTITUT FIZIK.

UNCLASSIFIED

USSR

UDC 621.396.967

KASHCHEYEV, B. L., ~~DELOV, I. A.~~, DUBNIK, B. S., TKACHUK, A. A.

"A Radar Set for Studying Faint Meteors"

Radiotekhnika. Resp. mezhved. nauch.-tekhn. sb. (Radio Engineering. Republic Interdepartmental Scientific and Technical Collection), 1971, vyp. 16, pp 11-18 (from RZh-Radiotekhnika, No 11, Nov 71, Abstract No 11G45)

Translation: The paper describes a set of radar equipment with the capacity for registering reflections from meteor trails with a linear electron density down to 10^{11} electrons/meter. The equipment has been successfully used for a period of three years. A schematic diagram is given as well as specimens of photographic registrations. Two illustrations, bibliography of eight titles. Resumé.

1/1

- 60 -

1/2 021 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--THE DEVELOPMENT AND INTRODUCTION OF ELECTRONIC COMPUTING EQUIPMENT
-U-
AUTHOR--LEMESHCHUK, P.K., SOKOLOV, V.F., DELRIO, B., FROLOV, V.YA.
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, ZHELEZNODOROZHNYI TRANSPORT, NO 1, JAN 70, PP 40-47
DATE PUBLISHED----JAN70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., MECH., IND., CIVIL AND
MARINE ENGR
TOPIC TAGS--COMPUTER APPLICATION, RAILWAY NETWORK, DIGITAL COMPUTER,
COMPUTER CENTER, COMPUTER TECHNOLOGY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/0063 STEP NO--UR/0232/70/000/001/0040/0047
CIRC ACCESSION NO--AP0108431
ZZZZZZZZZZZZ UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0108431

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS ARTICLE IS THE FIRST PART OF A TWO PART TREATMENT OF DEVELOPMENTS IN THE UTILIZATION OF ELECTRONIC COMPUTERS AND RELATED EQUIPMENT IN THE USSR RAILROAD SYSTEM. AFTER AN INTRODUCTORY PORTION, IN WHICH THE AUTHORS MENTION, AMONG OTHER THINGS, THAT THERE ARE PRESENTLY MORE THAN 30 ELECTRONIC DIGITAL COMPUTERS IN OPERATION ON SOVIET RAILROADS, THE ARTICLE IS DIVIDED INTO THE FOLLOWING SELFEXPLANATORY SECTIONS: THE DIRECTION OF THE USE OF ELECTRONIC DIGITAL COMPUTERS IN TRANSPORTATION; RAILROAD COMPUTER CENTERS; INFORMATION AND PLANNING SYSTEMS; PARENTHESIS AND PARENTHESIS THE MAIN COMPUTER CENTER OF THE MINISTRY OF RAILWAYS.

77777777777

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--THE DEVELOPMENT AND INTRODUCTION OF ELECTRONIC COMPUTING EQUIPMENT
IN RAILROAD TRANSPORT -U-
AUTHOR-(04)-LEMESHCHUK, P.K., SOKOLOV, V.F., DELID, B., FROLOV, V.YA.
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, ZHELEZNOGOROZHNYI TRANSPORT, NO 2, FEB 70, PP 42-48
DATE PUBLISHED---FEB70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--COMPUTER APPLICATION, AUTOMATIC CONTROL SYSTEM, RAILWAY
TRANSPORTATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1989/1444 STEP NO--UR/0232/70/000/002/0042/0048
CIRC ACCESSION NO--AP0107892
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0107892

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS ARTICLE IS THE SECOND PART OF A TWO PART TREATMENT OF DEVELOPMENTS IN THE UTILIZATION OF ELECTRONIC COMPUTERS AND RELATED EQUIPMENT IN THE USSR RAILROAD SYSTEM. THE FOLLOWING SUBJECTS ARE DISCUSSED: CREATION OF A LONG DISTANCE DATA TRANSMISSION NETWORK; THE AUTOMATIC READING OF INFORMATION FROM MOVING ROLLING STOCK; THE "AVTODISPETCHER" SYSTEMS FOR THE DIRECT CONTROL OF STATIONS AND SECTIONS; THE "EKSRESS" SYSTEM FOR THE AUTOMATION OF PRODUCTION PROCESSES CONNECTED WITH SPACE RESERVATION AND THE SALE OF TICKETS, ETC., FOR LONG DISTANCE PASSENGER TRAINS; THE LEMESHCHUK, P. K., ET AL., ZHELEZNODOROZHNYI TRANSPORT, NO 2, FEB 70, PP 42-48 SOFTWARE FOR A SYSTEM FOR THE AUTOMATED CONTROL OF THE TRANSPORTATION PROCESS; THE REQUIREMENTS IMPOSED ON COMPUTING EQUIPMENT; AND THE TRAINING OF PERSONNEL.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--NITRILE AND ESTERS OF BETA,PERFLUORO-TERT-BUTYL, PROPIONIC ACID -U-
AUTHOR-(03)-KNUNYANTS, I.L., PERVOVA, YE.YA., DELYAGINA, N.I.
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 264,386.
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--03MAR70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ACRYLONITRILE, PROPIONIC ACID, FLUORINATED ORGANIC COMPOUND,
ACRYLATE, ISOBUTENE, CHEMICAL PATENT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3007/0839 STEP NO--UR/0482/70/000/000/0000/0000
CIRC ACCESSION NO--AA0136273
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AA0136273

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COMPD. IS PREPO. BY
REACTING ACRYLONITRILE OR ACRYLATES WITH PERFLUOROISOBUTYLENE IN THE
PRESENCE OF CSF OF KF. FACILITY: INSTITUT
ELEMENTOORGANICHESKIKH SOYEDINENIY AN SSSR.

UNCLASSIFIED

USSR

UDC 549.746

INDOLEV, L. N., ZHDANOV, YU. YA., KASHIRTSEVA, K. I., SUKKEV, V. S., and
DEL'YANIDI, K. I., Institute of Geology, Yakutsk Branch, Siberian Department
of the Academy of Sciences USSR

"Magnesium and Aluminum Hydrocarbonates -- the New Mineral Indifirite"

Zapiski Vsesoyuznogo Mineralogicheskogo Obshchestva, 2nd Series, No 2, 1971,
pp 178-183

Abstract: A new mineral has been found along the Indifirka river in North-east Yakutia (near the Arctic Circle). Called "indifirite," the mineral is a rosette-like divergent, randomly arranged aggregate. In the center of the rosette there are occasionally fine "seed" hips. In the fine cracks, fan-shaped deposits are cleaved by a mass of very fine fibers, needles, or lamina about 1 mm in length. Indifirite is snow-white, and has a glossy luster with a silky cast. The hardness is about 2. The lamina and fibers are elastic. The specific weight is 1.6 ± 0.1 .

Indifirite is not radioactive and is optically anisotropic. It is insoluble in water, alcohol, and ammonia. In acids and KOH it dissolves instantly, with the formation of odorless gas bubbles. Chemical analysis gave the following composition, (in wt.%): MgO, 12.08%; Al_2O_3 , 14.58%; CaO 1/2

- 74 -

USSR

INDOLEV, L. N., et al., Zapiski Vsesoyusnogo Mineralogicheskogo Obshchestva, 2nd Series, No 2, 1971, pp 178-183

0.45% Fe_2O_3 , 0.64% CO_2 , 24.18%; H_2O , 44.36%; SO_3 , 0.45%.

Electron microscopic pictures revealed elongated tabular forms with uneven edges. Fine material was noted in the crystalline spaces and dehydration of the mineral under vacuum was observed. The parameters of the dehydrated crystals were found to be for c_0 , $6.23 \pm 0.02\text{\AA}$ lengthwise and $3.16 \pm 0.02\text{\AA}$ crosswise, which was close to that of artinite. Debye powder patterns for the untreated mineral did not match any known mineral or synthetic compound. Heat treatment at 100°C also gave an original Debye pattern, but material heat treated at 900°C showed a spinel-type pattern which is natural for a magnesium-aluminum hydrocarbonate. Heat loss curves showed endothermic minima at 120° , 160° , and 215°C . Very little change in weight was noted above 200°C . A very slight endothermic effect was noted at 550°C for two of three samples. The peaks suggested loss of water of crystallization, hydroxyl water, and dissociation of complex carbonates. Infra-red spectra confirmed the proposed structure of the new mineral. Comparisons were also made with other water-containing magnesium or magnesium-aluminum carbonates.

2/2

USSR

UDC 669.893.018.9(088.8)

GOLEV, A. K., DELYAYEV, G. S., ZAYKO, V. P., RYSS, M. A.

"Method of Smelting Barium Alloys"

USSR Author's Certificate No. 277001, Filed 9/07/68, Published 20/10/70.
(Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5
G178P by G.Svodtseva).

Translation: In producing Ba alloy by the silicothermal method, the reduction process is performed with expenditure of quartzite in a quantity of 10-50% of the weight of the BaSO_4 in the charge. In order to assure complete separation of metal from slag, CaC_2 is introduced to the slag in a quantity of 20-40% of the slag weight. The method provides for production of an alloy of the following composition (in percent): Ba 3-50, Ca 1-20, Si 40-70, Fe 15-30, S up to 0.080.

1/1

- END -

6022

CSO: 1842-W

USSR

UDC: 681.3.06:51

DELYUKIN, G. V., YEGOROVA, T. G., POLYAKOV, V. A., and TALALAY, M. M.

"Subprograms for Processing Symbolic Information"

Vestn. Khar'kov politekhn. in-ta (Herald of the Kharkov Polytechnical Institute) No 77, 1973, pp 14-16 (from RZh--Avtomatika, telemekhanika i vychislitel'naya tekhnika, No 12, 1973, Abstract No 12B139)

Translation: The deficiencies of glossary capacity in modern and newly designed electronic computers are considered. It is proposed to increase the computer's glossary capacity by introducing new commands or standard subprograms for element-by-element transformation of symbols. The content of most of the programs is described by the command of a hypothetical computer.

Increasing the glossary capacity of the computer permits realization of element-by-element transformation of symbols, eases the associative search for information, and simplifies the modeling of digital devices of any significance on existing computers of the general type. Resume.

1/1

- 12 -

USSR

UDC 577.4

DELYUKIN, G. V.

"Assigning the Structure of an Automaton"

Vestn. Khar'kov. politekhn. in-ta (Vestnik of Khar'kov Polytechnic Institute),
1972, No 61, pp 3-6 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V347)

No abstract

1/1

- 12 -

USSR

UDC 577.4

DELYUKIN, G. V.

"Minimizing the Structure of an Automaton"

Vestn. Khar'kov. politekhn. in-ta (Vestnik of Khar'kov Polytechnic Institute),
1972, No 61, pp 6-11 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V346)

No abstract

1/1

USSR

UDC 543.544.45:535.322.4.08

AYOLLO, Z. S., DEVDARIANI, I. V., DELYUSTO, V. V., KARABEGOV, M. A., KOMRAKOV, YU. I., MCHEDLISHVILI, K. A.

"Refractometric Detector for Liquid Chromatographs"

Dokl. Vses. soveshch. Optich. i titrometrich. analizatory zhidk. sred. 1971.
Ch. 2 (Reports of the All-Union Conference on Optical and Titrometric Analyzers of Liquid Media, 1971, Part 2), Tbilisi, 1971, pp 60-65 (from RZh--Metrologiya i Izmeritel'naya Tekhnika, No 3, Mar 72, Abstract No 3.32.1123)

Translation: A model of a refractometric detector developed at the Special Design Office for Analytical Instrument Making is described. The detector is designed for operation with a gel filtration chromatograph. The sensitivity threshold of the gel chromatograph is $\sim 10^{-3}$ - 10^{-4} mg/ml of analyzed component. The sensitivity of the recording differential refractometer when measuring the index of refraction must be no worse than $1 \cdot 10^{-6}$ - $1 \cdot 10^{-7}$. The check of the sensitivity of the refractometer performed with respect to the height of the peak on the chromatograms demonstrated the reliability of the analysis at $\sim 5 \cdot 10^{-5}$ mg/ml. The device was developed to investigate the molecular mass distribution of polymers, but the experimental studies demonstrated the possibility of using a differential refractometer (without a chromatograph) for any refractometric measurements. There are 4 illustrations.
1/1

USSR

UDC 621.315.592

KARANOVA, YE. K., DEMAKOV, D. K., STARININ, K. V., STREL'TSOV, and KHAYBULLIN, I. B.

"Study of Single-Crystal SiC Films Obtained by Bombardment of Si Single Crystals With O^+ Ions"

Moscow, Doklady Akademii Nauk SSSR, Vol 200, No 4, 1971, pp 869-870

Abstract: The authors obtained SiC films by bombarding Si single crystals with atomic carbon ions with an energy of 40 kev and a dose of over 10^{17} ions/cm² at 600 and 700°. IR absorption spectra were used to identify the ion-implanted films with the SiC compound. Electron-diffraction studies made on the ion-implanted SiC layers by the reflection method showed that a temperature of 700° is necessary to create single-crystal SiC film by the ion bombardment method. To study the structure of the n-SiC-n- and p-Si hetero-junctions created by the ion method, measurements were taken of the photo-emf spectra and I-V characteristics of these junctions. The results indicate a correspondence between the real energy structure of the hetero-junction and the theoretical one. The method of creating heterostructures by ion irradiation makes it possible to create single-crystal layers of compounds of the implanted ion with atoms of the elements making up the sub-

1/2

USSR

KARANOVA, YE. K., et al., Doklady Akademii Nauk SSSR, Vol 200, No 4, 1971, pp 869-870

strate, even in the case of a great difference between the lattice constants of the compound and those of the substrate.

2/2

- 78 -

1/2 014 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--USE OF ATOMIC ABSORPTION SPECTRA FOR DETERMINING EXCESS QUANTITIES
OF SELENIUM AND ZINC IN ZINC SELENIDE -U-
AUTHOR--(03)--RUDNEVSKIY, N.K., DEMARIN, V.T., NYROKOVA, O.A.
COUNTRY OF INFO--USSR
SOURCE--ZH. PRIKL. SPEKTROSK. 1970, 12(1), 156-8
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ATOMIC SPECTRUM, ABSORPTION SPECTRUM, SELENIUM, SELENIUM,
SELENIUM COMPOUND, ZINC, ZINC COMPOUND, VACUUM DISTILLATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1983/0929 STEP NO--UR/0368/70/012/001/0156/0158
CIRC ACCESSION NO--AP0053853
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0053853

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SE EXCESS IS SEPD. FROM THE MAIN COMPONENT ZNSE BY VACUUM DISTN. IN A SEALED TUBE. AT 600DEGREES SE DISTILLS OFF AND IT IS CONDENSED IN THE COLDER PART OF THE TUBE. THE TUBE IS OPENED, SE IS DISSOLVED IN HNO SUB3, AND THE SOLN. IS EVAPD. THE SAMPLE IS PLACED IN A CELL WITH AN AR ATM. (3 ATM) AND HEATED TO 1900DEGREES. THE ABSORBANCE AT 207.4 NM IS MEASURED. THE SENSITIVITY IS 0.01PERCENT SE AND RELATIVE STD. DEVIATION IS 10PERCENT. ZNSE EVAPS. AT IS GREATER THAN OR EQUAL TO 800DEGREES, THE EXCESS OF ZN FROM THIS COMPD. CAN BE VAPORIZED AT 760DEGREES IN A CELL WITH AN AR ATM. THE AT. ABSORPTION AT 307.6 NM IS MEASURED. SENSITIVITY AND RELATIVE STD. DEVIATION ARE 10-3PERCENT AN AND 15PERCENT. THE DETN. OF ZN AND SE BY AT. ABSORPTION IS SIMILIAR TO 10 TIMES MORE SENSITIVE THAN THE SPECTROGRAPHIC DETN., THEIR PRECISION HAS THE SAME ORDER OF MAGNITUDE.

UNCLASSIFIED

1/3 007 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--COMPONENTS OF ESSENTIAL OILS. XLVI. SYNTHESIS OF ANALOGS OF AUXINS
BASED ON COMPHOR -U-
AUTHOR--(03)-YURINA, R.A., DEMBITSKIY, A.D., GORYAYEV, M.I.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK KAZ. SSR, SER. KHIM. 1970, 20(1), 86-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--HYDROXY CARBOXYLIC ACID, WOOD CHEMICAL PRODUCT, ORGANIC
NITRILE COMPOUND, ESTER, VEGETABLE OIL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1993/0698 STEP NO--UR/0360/70/020/001/0086/0089
CIRC ACCESSION NO--AP0113564
UNCLASSIFIED

2/3 007

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0113564

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALOGS OF AUXINS (KETO AND HYDROXY ACIDS CONTG. THE 1,1,2,TRIMETHYL,2,CYCLOPENTENYL GROUP) WERE PREPD. FROM CAMPHOR (I). THUS TO 300 G AQ. HI (D. 1.7) 300 G I OXIME WAS ADDED TO GIVE 70PERCENT BETA CAMPHOLENONITRILE (II), M. 225DEGREES. ONE PART II AND ONE PART 50PERCENT ALC. KOH GAVE A PRODUCT WHICH UPON SATN. WITH NH SUB3 PPTD. BETA COMPHOLENIC ACID NH SUB4 SALT, M. 125-60DEGREES (ISOPROH), FROM WHICH FREE ACID (III), M. 52-3DEGREES, B SUB20 185DEGREES, N PRIME20 SUBD 1.4756; (AMIDE M. 85.5-86DEGREES) WAS OBTAINED. TO 50 G III AND 60 ML ET SUB2 O, 60 ML SOCL SUB2 WAS ADDED TO GIVE 49 G BETA CAMPHOLENOYL CHLORIDE (IV), (B SUB10 86-7DEGREES, N PRIME20 SUBD 1.4712). THE CONDENSATION OF 49 G IV WITH 50 G 1,MORPHOLIN,1,CYCLOPENTENE AND 42 ML ET SUB3 N IN 300 ML CHCL SUB3 GAVE 46 G 3,(1,1,2,TRIMETHYL,2,CYCLOPENTENYL),6,OXOENANTHIC AICD (V), B SUB2 183-5DEGREES, N PRIME20 SUBD 1.4885; ME ESTER B SUB2 153-5DEGREES, N PRIME20 SUBD 1.4800, D PRIME20 SUB20 1.0011. THE CONDENSATION OF 98 G IV WITH 98 G 1,MORPHOLIN,1,CYCLOHEXENE GAVE 90 G 3,(1,1,2,TRIMETHYL,2,CYCLOPENTENYL),7,OXOCAPRYLIC ACID (VI), B SUB2 189-91DEGREES, N PRIME20 SUBD 1.4960; ME ESTER B SUB2 159-61DEGREES, N PRIME20 SUBD 1.4860, D PRIME20 SUB20 0.9952.

UNCLASSIFIED

3/3 007

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0113564

ABSTRACT/EXTRACT--THE REDN. OF 106 G V OR 100 G VI WITH AL ISOPROPOXIDE
GAVE, RESP., 85 G 3, (1,1,2,TRIMETHYL,2,CYCLOPENTENYL),6, HYDROXYENANTHIC
ACID, B SUB2 202-4DEGREES, N PRIME20 SUBD 1.4970 (ME ESTER B SUB2
170-2DEGREES, N PRIME20 SUBD 1.4810, D PRIME20 SUB20 1.0001), AND 84 G
3, (1,1,2,TRIMETHYL,2,CYCLOPENTENYL),7, HYDROXYCAPRYLIC ACID, B SUB2
199-202DEGREES, N PRIME20 SUBD 1.4930; ME ESTER 173-5DEGREES, N PRIME20
SUBD 1.4815, D PRIME20 SUB20 0.9931. FACILITY: INST. KHIM.
NAUK, ALMA-ATA, USSR.

UNCLASSIFIED

Therapy

USSR

UDC 615.814.1-07

DEMO, A. M., Candidate of Medical Sciences, Psychotherapy Office, Kiev
~~Oblast~~ Clinical Hospital

"Use of Acupuncture to Determine and Increase Suggestibility"

Kiev, Vrachebnoye Delo, No 6, 1972, pp 128-130

Abstract: Before inserting three needles into the patient's body, one in the trunk, the other two in the extremities, the doctor tells the patient to concentrate on one extremity so that the sensation at the other spots where the needles are to be inserted will be extinguished. If the patient then says he actually does not feel the spots on the trunk and other extremity but experiences a sensation of bursting at the spot on which he focused his attention, the sensation intensifies and spreads over the entire extremity, that individual may be considered ready for further suggestion. Should he continue to concentrate on some particular spot on the extremity, ideomotor muscular contractions will occur and compress the needle, thereby renewing and intensifying the extinguished sensation.

1/1

USSR

UDC [537.226+537.311.33]:[537+535]

BAZAKUTSA, V. A., VOINOVA, L. G., ROGACHEVA, YE. I., and DEMBOVSKIY, S. A.

"Electrophysical Properties and Structures of Some Indium and Thallium Tellurides in Thin Layers"

V sb. Tonkiye plenki soyedineniy tellura s metallami podgrupp tsinka i galliya (Thin Films of Tellurium Compounds With Metals of Zinc and Gallium Subgroups -- Collection of Works), Vil'nyus, 1970, p 111 (from RZh-Fizika, No 10, Oct 71, Abstract No 10YE760 by authors)

Translation: Thin layers of TlSeTe_2 were obtained by thermal evaporation in vacuum. Amorphous layers of condensate were obtained by deposition on cold substrates. Heat treatment of amorphous films of TlSbTe_2 in vacuum at $T=350^\circ \text{K}$ resulted in their crystallization. The authors studied the following basic electrophysical parameters of amorphous and polycrystalline layers of TlSbTe_2 : specific conductivity, Seebeck coefficient, concentration and sign of current carriers, thermal activation energy. Transmission and reflection of amorphous and polycrystalline layers of TlSbTe_2 in the spectral range from 0.7-15 microns were measured. The effective mass of current carriers was calculated according to IR reflection spectra. In_2Te_3 films were obtained by cathode sputtering of the initial semiconductor in an Ar atmosphere. The

1/2

• USSR

BAZAKUTSA, V. A., et al., Tonkiye plenki soyedineniy tellura s metallami podgrupp tsinka i galliya, 1970, p 111

structure and following basic electrophysical parameters of films were studied: specific conductivity, Seebeck coefficient, concentration and sign of current carriers, energy gap.

2/2

- 64 -

USSR

UDC: 539.182.8

CHEPELEVA, I. V., LAZUKIN, V. N., OZHEREL'YEV, B. V., and
DEMBOVSKIY, S. A.

"Electron Paramagnetic Resonance of Fe^{3+} Ions in Chalcogenide
Glasses As_2Se_3 and TlAsSe_2 "

Moscow, Doklady Akademii nauk SSSR, vol 204, No 2, 1972, pp 324-
327

Abstract: This paper describes experiments performed to investigate the electron paramagnetic resonance of Fe^{3+} ions in As_2Se_3 chalcogenide glasses in the wavelength range of 3.2 cm using an RE-1301 spectrometer at 293 and 77° K. Observations were also made with a superheterodyne spectrometer at 4.2° K. Four groups of electron paramagnetic resonance spectra are arranged according to similarities in shape, effective g-factor, and temperature dependence. Samples of the spectra are shown, and a curve of the magnetic susceptibility of the chalcogenide glasses as a function of the temperature is plotted. It is found that the spectra of the four groups can be explained by the spin Hamiltonian. The authors thank N. Ye. Kask for observing the spectra at 4.2° K, and V. N. Prudnikov for investigating the magnetic susceptibility.
1/1

- 118 -

1/2 022

UNCLASSIFIED

PROCESSING DATE--18SEP70

TITLE--EFFECT OF HIGH PRESSURE ON THE CRYSTALLIZATION OF ARSENIC AND
SULFUR GLASSES -U-

AUTHOR--(05)-TIMOFEYEVA, N.V., VINOGRADOVA, G.Z., FEKLICHEV, YE.M.,
DEMBOVSKIY, S.A., KALASHNIKOV, YA.A.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(4), 902-4 (PHYS CHEM)

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--HIGH PRESSURE EFFECT, GLASS CRYSTALLIZATION, ARSENIC
COMPOUND, SULFUR COMPOUND, X RAY ANALYSIS, GLASS STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1984/1575

STEP NO--UR/0020/70/190/004/0902/0904

CIRC ACCESSION NO--AT0100193

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AT0100193

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE CRYSTN. OF AS SUB2 S SUB3 GLASSES WAS DETD. AT 30-70 KILOBARS AND UP TO 500DEGREES. AS SUB2 S SUB3 CRYSTD. AT 250DEGREES AND 40-70 KILOBARS. X RAY PHASE ANAL. PROVED THAT THE OBTAINING CRYST. AS SUB2 S SUB3 HAS THE SAME STRUCTURE AS THE NATURALLY OCCURRING ORPIMENT (I). BETA AS SUB2 S SUB3 FORMED AT 400DEGREES. IT HAS A STRUCTURE DIFFERENT THAN I. AS SUB2 S SUB5 GLASS (H. 190DEGREES) CRYSTD. AT GREATER THAN 250DEGREES AND 50-70 KILOBARS. AS SUB2 S SUB5 HAS AN ORTHORHOMBIC STRUCTURE WITH A CONGRUENT TO 10.37, B CONGRUENT TO 9.9, AND C CONGRUENT TO 8.66 ANGSTROM.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--VISCOSITY AND STRUCTURE OF AS SUB2 X SUB5 ASI SUB3 SYSTEM GLASSES
-U-
AUTHOR--(03)--CHERNOV, A.P., DEMBOVSKIY, S.A., MAKHCVA, V.I.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(4), 823-5
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--ENTROPY, ACTIVATION ENERGY, GLASS STRUCTURE, SELENIUM ARSENIC
GLASS, GLASS VISCOSITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/2189 STEP NO--UR/0363/70/006/004/0823/0825
CIRC ACCESSION NO--AP0125769
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125769

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE VISCOSITY OF GLASSES IN THE AS SUB2 X SUB3 ASI SUB3 (WHERE X EQUALS S, SE) SYSTEMS WAS INVESTIGATED. ANAL. OF THE ACTIVATION PARAMETERS OF THE VISCOSITY MADE IT POSSIBLE TO FORMULATE A CONCLUSION AS TO THE STRUCTURE OF THE GLASS AND TO SHOW THE INTERRELATION BETWEEN THE STRUCTURE AND THE PREVIOUSLY STUDIED PHASE DIAGRAMS. THE PREVIOUSLY USED TECHNIQUES WERE USED FOR THE SYNTHESIS OF THE COMPS. AND FOR THE VISCOSITY MEASUREMENTS. THE VISCOSITY BEHAVIOR FOR GLASSES OF BOTH SYSTEMS IS SIMILAR. THE INTERACTION BETWEEN AS SUB2 X SUB3 AND ASX1 HAS A EUTECTIC CHARACTER, WITH THE COMPS. OF THE EUTECTICS BEING SIMILAR TO 35 AND 45 MOLE PERCENT ASI SUB3, RESP. THE SOFTENING TEMP. VALUES FOR THE GLASSES STUDIED, AS OBTAINED FROM THE THERMAL ANAL. DATA, ARE PRESENTED. THE BASIC INFORMATION CONCERNING THE STRUCTURE OF THE GLASSES STUDIED IS GIVEN BY THE ANAL. OF THE ACTIVATION ENTROPY OF VISCOUS FLOW IN THE SOFTENING TEMPS. REGION. THE RESP. CURVES ARE SIMILAR FOR BOTH SYSTEMS STUDIED. IN BOTH SYSTEMS A SHARP MAX. CORRESPONDS TO THE COMP. OF THE COMPD. ASX1. IT IS OBVIOUS THAT THESE COMPS., WHICH EXIST IN THE CRYST. STATE, DET. ALSO THE STRUCTURE OF THE GLASS. FACILITY: INST. OBSHCH. NEORG. KHIM. IM. KURNAKOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 011
UNCLASSIFIED
TITLE--ARSENIC SESQUISELENIDE ARSENIC SESQUITELLURIDE SYSTEM -U- PROCESSING DATE--13NOV70
AUTHOR--(03)-KHVOROSTENKO, A.S., DEMBOVSKIY, S.A., LUZHNYA, N.P.
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(6), 1705-6
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--PHASE DIAGRAM, MICROHARDNESS, ARSENIC COMPOUND, SELENIDE, TELLURIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1404 STEP NO--UR/0078/70/015/006/1705/1706
CIRC ACCESSION NO--AP0135078
UNCLASSIFIED

2/2 011
CIRC ACCESSION NO--AP0135078 UNCLASSIFIED PROCESSING DATE--13NOV70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PHASE DIAGRAM AND MICROHARDNESS
DIAGRAM TO THE AS SUB2 SE SUB3 -AS SUB2 TE SUB3 SYSTEM ARE CONSTRUCTED.
THE SYSTEM FORMS EUTECTIC, M. 280DEGREES AND CONTG. 53 MOLE PERCENT AS
SUB2 TE SUB3 AND 2 SOLID SOLNS. THE STUDY DOES NOT CONFIRM FORMATION OF
AS SUB2 SE SUB3 .AS SUB2 TE SUB3.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--GLASS FORMATION IN GERMANIUM, SELENIUM AND IODINE AND SILICON,
SELENIUM AND IODINE SYSTEMS -U-
AUTHOR--(02)-DEMBOVSKIY, S.A., POPOVA, N.P.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(1), 138-40
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--SELENIUM GERMANIUM GLASS, IODIDE, GLASS CRYSTALLIZATION,
CHEMICAL STABILITY, CHALCOGENIDE GLASS, SILICON
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1984/0098 STEP NO--UR/0363/70/006/001/0138/0140
CIRC ACCESSION NO--AP0054895
UNCLASSIFIED

2/2

016

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054895

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE GE, SE, I AND SI, SE, I SYSTEMS WERE INVESTIGATED IN AN ATTEMPT TO FIND NEW REGIONS OF GLASS FORMATION. FURTHERMORE, AN ATTEMPT TO FIND NEW TERNARY COMPS., ANALOGS OF THE CHALCOGENIDES, WAS MADE. SOME 20-25 COMPS. WERE SYNTHESIZED IN EACH SYSTEM. GLASS FORMATION OCCUPIES VERY BROAD REGIONS. IN BOTH SYSTEMS, THE GLASS FORMATION REGION GOES FROM THE SE CORNER DEEP INTO THE SYSTEM. GLASSES ADJACENT TO THE GLASS FORMATION REGION CRYSTALLIZE EASILY AND ARE OF LOW STABILITY. GLASSES OF THE GE, SE, I SYSTEM ARE MORE STABLE IN AIR AND HAVE A LOWER CRYSTN. CAPABILITY THAN GLASSES OF THE SI, SE, I SYSTEM. THE LATTER ARE UNSTABLE IN AIR. ALL 3 TERNARY COMPS. (GESEI SUB2, GE SUB2 SE SUB3 I SUB2, AND GE SUB2 SEI SUB6) HAVE 0 ANALOGS. THE PROPERTIES OF THESE COMPS. ARE COMPARED WITH THOSE OF GESE SUB2, SISEI SUB2, AND GEI SUB2.

UNCLASSIFIED

1/2 011
UNCLASSIFIED
TITLE--PHASE DIAGRAM OF AS SUB2 X SUB3 AND ASI SUB3 (X IS SULFUR,
SELENIUM) -U- PROCESSING DATE--18SEP70
AUTHOR--(03)-CHERNOV, A.P., DEMBOVSKIY, S.A., KIRILENKO, I.A.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(2), 262-5
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, CHEMISTRY
TOPIC TAGS--PHASE DIAGRAM, PHYSICAL CHEMISTRY PROPERTY, EUTECTIC MIXTURE,
SELENIUM COMPOUND, ARSENATE, IODIDE, SULFIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1968/0560 STEP NO--UR/0363/70/006/002/0262/0265
CIRC ACCESSION NO--AP0105545
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0105545

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. BY USING PHYS. CHEM. ANAL. METHODS, THE PHASE DIAGRAMS OF THESE SYSTEMS WERE PLOTTED. IN BOTH SYSTEMS, THE EXISTENCE OF THE CHEM. COMPO. OF COMPN. ASXI WAS CONFIRMED. THE EUTECTIC NATURE OF REACTION IN THE INDIVIDUAL AS SUB2 X SUB3NEGATIVE ASXI AND ASXI-ASI SUB3 SYSTEMS WAS ESTABLISHED; THERE IS A LIQ. PHASE SEPN. REGION IN THE AS SUB2 SE SUB3NEGATIVE ASI SUB3 SYSTEM.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--PHASE DIAGRAM OF AS SUB2 X SUB3 AND ASI SUB3 (X IS SULFUR,
SELENIUM) -U-
AUTHOR--(03)-CHERNOV, A.P., DEMBOVSKIY, S.A., KIRILENKO, I.A.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(2), 262-5
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, CHEMISTRY
TOPIC TAGS--PHASE DIAGRAM, PHYSICAL CHEMISTRY PROPERTY, EUTECTIC MIXTURE,
SELENIUM COMPOUND, ARSENATE, IODIDE, SULFIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1968/0560 STEP NO--UR/0363/70/006/002/0262/0265
CIRC ACCESSION NO--AP0105545
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0105545

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BY USING PHYS. CHEM. ANAL. METHODS, THE PHASE DIAGRAMS OF THESE SYSTEMS WERE PLOTTED. IN BOTH SYSTEMS, THE EXISTENCE OF THE CHEM. COMPD. OF COMPN. ASXI WAS CONFIRMED. THE EUTECTIC NATURE OF REACTION IN THE INDIVIDUAL AS SUB2 X SUB3NEGATIVE ASXI AND ASXI-ASI SUB3 SYSTEMS WAS ESTABLISHED; THERE IS A LIQ. PHASE SEPN. REGION IN THE AS SUB2 SE SUB3NEGATIVE ASI SUB3 SYSTEM.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--RADIOCHEMICAL STUDY OF PLATINUM DISSOLUTION IN ACID ELECTROLYTES AT
VARYING POLARIZATIONS. I. EXPERIMENTAL PROCEDURES AND SOME RESULTS -U-
AUTHOR-(03)-CHEMODANOV, A.N., KOLODYRKIN, YA.M., DEMBROVSKIY, M.A.
COUNTRY OF INFO--USSR
SOURCE--ELECTROKIMIYA 1970, 6(4), 460-8
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--RADIO CHEMISTRY, PLATINUM, ELECTROLYTE, SOLUBILITY, NITRIC
ACID, HYDROCHLORIC ACID, PERCHLORIC ACID, SULFURIC ACID
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/1149 STEP NO--UR/0364/70/006/004/0460/0468
CIRC ACCESSION NO--AP0121708
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121708

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DISSOLN. OF PT IN H SUB2 SO SUB4, HCL, HCL0 SUB4, HND SUB3, AND THEIR MIXTS. WAS INVESTIGATED OVER A BROAD RANGE OF POTENTIALS INCLUDING THE REGION OF H EVOLUTION. ELECTRODES WERE MADE OF PT PRETREATED IN A STREAM OF NEUTRONS AND THE QUANTITY OF PT IN THE ELECTROLYTE WAS FOLLOWED BY RADIOMETRY. THE RATE OF DISSOLN. OF PT WAS GOVERNED BY THE COMPN. AND CHARACTER OF THE SURFACE OXIDE FILMS IN BOTH THE ANODIC AND CATHODIC REGIONS. THE KIND AND CONC. OF THE ELECTROLYTE WERE OF MINOR IMPORTANCE ONLY. FACILITY: FIZ. KHIM. INST. IM. KARPOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 582.288:581.2:634.956(477.234)

TRYBUN, P. A.; DVOYNOS, L. M.; ~~DEMCHAK, I. I.~~; Carpathian Branch, Ukrainian Scientific Research Institute of Forest Management and Agricultural and Forest Melioration; Institute of Microbiology and Virology, Academy of Sciences Ukrainian SSR

"Species Composition of Fungi That Cause Diseases of Tree Seedlings in Nurseries of Ivanovo-Frankovskaya Oblast"

Kiev, Ukrainskiy Botanicheskiy Zhurnal, Vol 28, No 4, Jul/Aug 71, pp. 511-514

Abstract: As a part of a study of fungus infections of trees in the forests of the Ukrainian Carpathians, a phytopathological investigation of tree nurseries of the State Forest Reserve in Ivanovo-Frankovskaya Oblast was carried out in 1968-70. It was established that seedlings of pedunculate oak (*Quercus robur*) were infected with powdery mildew caused by *Microsphaera alphitoides*; those of European beech (*Fagus sylvatica*) were infected with *Pestalozzia hartigi* and *Fusarium javanicum*; and those of

1/2.

- 16 -

USSR

TRYBUN, P. A., et al, Ukrainskiy Botanicheskiy Zhurnal, Vol 28, No 4, Jul/Aug 71, pp 511-514

oriental beech (*Fagus orientalis*) with *Pestalozzia hartigi* and *Fusarium avenaceum*. Sweet cherry (*Prunus avium*) seedlings were infected with coccomycosis caused by *Coccomyces hiemalis*. Root rot of coniferous and deciduous species was caused by eight species and various genera of *Fusarium*. In addition to being affected by fusariosis, seedlings of Scotch pine (*Pinus sylvestris*) were infected with a disease caused by *Melampsora pinitorqua*.

2/2

USSR

UDC 616.981.49-022.39:599:323.41-036.22

VORONETS, N. P., DEMCHENKO, D. K., RODINA, K. YA., and RODIN, S. G.

"A Breslau Epizootic Among Norway Rats and Breslau Salmonellosis Among Humans"
Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 3, 1971,
pp 145-146

Abstract: In the course of a minor outbreak of Breslau salmonellosis from 11 to 18 June 1969, a number of febrile persons with symptoms of gastroenteritis were admitted to the authors' hospital at the rate of 1 or 2 a day for 1 week. A pigsty and adjacent structures located in the area where the patients lived was found to be overrun with sick Norway rats. Several measures to exterminate the rats were taken and 4 days later the infection disappeared among the local inhabitants, with no new cases reported. Cultures isolated from both sick people and surviving and dead rodents proved to be identical in cultural, biochemical, and serological characteristics.

1/1

- 53 -

USSR

UDC: 621.373.4(088.8)

~~DEMCHENKO~~, K. M., SKRIPKA, L. M., ANTONOV, Ye. V., KAULIN, Ye. F.,
KOGOV, P. V., and NAUMOV, A. M.

"Test Signal Formation Device for Tuning Electronic Equipment"

Avt. sv. SSSR (Author's Certificate USSR) Class 21a⁴, 8/01, (H 03
b 23/00), No. 270825, Application 27.01.69, Publication 1.09.70
(from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3A406F)

Translation: A device is proposed for forming a test signal for
tuning electronic equipment, containing a frequency wobulator,
a modulator, fixed stable frequency oscillators, an automatic
gain control circuit, a marker generator, and a control device.
The device is distinguished in that, for the purpose of simpli-
fying the equipment for formation of powerful undistorted signals
consisting of pulses of FM oscillations at low resistance loads,
the fixed frequency oscillators mentioned above are connected
through a summing circuit to the frequency wobulator. E. I.

1/1

DEMCHENKO, L. I.

"The Economical Method of A. A. Samarskiy for Solution of a Two-Dimensional Hyperbolic Equation in a Rectangular Area"

Algoritmy i Algoritmich. Yazyki [Algorithms and Algorithmic Languages -- Collection of Works], No 5, Moscow Acad. Sci. USSR Computer Center, 1971, pp 29-39, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V542 by the author).

Translation: An algorithm is presented, plus a program in ALGOL-60, for numerical solution of a two-dimensional hyperbolic equation by a local one-dimensional method. The program is equipped with a test example.

1/1

- 68 -

Acc. Nr

AP0034231

Abstracting Service:
CHEMICAL ABST. 4-70

Ref. Code

UR 0078

D

74283c Products of the reaction of hexamethylenetetramine with cyanates, thiocyanates, and selenocyanates of some metals. Tsintsadze, G. V.; Mamulashvili, A. M.; Deshchinskii, L. P. (Gruz. Politekh. Inst., Tbilisi, USSR). *Zh. Neorg. Khim.* 1970, 15(1), 276-8 (Russ). The ir absorption frequencies of XCN (X = O, S, or Se) and CN groups of products of reaction of XCN salts of Mn, Co, Ni, Fe, Zn, Cd with hexamethylenetetramine (I) are given. The compds. were also studied by x-ray powder diffraction. Selenocyanates and thiocyanates of Mn, Fe, Co, and Zn form isostructural complexes with I. Metal ions of these complexes are octahedrally coordinated (4H₂O and 2XCN). Cd complexes have bridging SCN and SeCN groups. Complexes of Mn, Co, and Ni cyanates are isostructural and have I coordinated in the inner sphere.

HM IR -

1
1

7

di

REEL/FRAME
19710884

USSR

UDC 669.24:539.375

DEMCHENKO, L. V., KONONENKO, V. A., and MORDYUK, N. S., Institute of Metal Physics, Academy of Sciences Ukr SSR

"Change of Substructure Disorientation in a Ni-Al Alloy During Ultrasonic Treatment and Creep"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 35, No 6, Jun 73, pp 1309-1312

Abstract: This work was conducted to study the changes in the substructure of Ni + 1.18 Al samples which occurred during ultrasonic exposure and creep. The change of substructure disorientation was determined by azimuthal erosion of reflections from one and the same grains at different stages of study. Microhardness was studied simultaneously. Part of the samples were investigated after deformation at room temperature for comparison of structural changes occurring due to ultrasonic treatment, which increase resistance to creep, with structural changes after mechanical-thermal treatment. Results of this work and analysis of literature data showed that dislocation sources, generating dislocation loops, are activated from ultrasonic exposure. The greater the amplitude of oscillations or treatment temperature the larger the number of dislocation sources activated and the higher the density of dislocation loops. On the other hand, stresses on the dislocations cause the dislocation loops

1/2

- 45 -

USSR

DEMCHENKO, L. V., et al., Fizika Metallov i Metallovedeniye, Vol 35, No 6, Jun 73, pp 1309-1312

to interact forming clouds and entanglements and low mobility dipoles which lead to irreversible processes. It was concluded that for high-temperature creep at the same applied load and same temperature, the sample creep rate under ultrasonic exposure is less than the creep rate of a simply annealed sample due to a much lower number of acting dislocation sources. 3 figures, 17 bibliographic references.

2/2

1/2 038 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--INCREASE IN HIGH TEMPERATURE CREEP RESISTANCE USING ULTRASONIC
IRRADIATION -U-
AUTHOR--(04)--DEMCHENKO, L.V., KOZYRSKIY, G.YA., KONONENKO, V.A., MORDYUK,
N.S.
COUNTRY OF INFO--USSR
SOURCE--FIZ. METAL METALLOVED. 1970, 29(3), 657-9
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, PHYSICS
TOPIC TAGS--CREEP RESISTANCE, METAL CREEP, NICKEL ALLOY, ALUMINUM
CONTAINING ALLOY, GRAIN SIZE, THERMOMECHANICAL TREATMENT, DEFORMATION
RATE, ULTRASONIC IRRADIATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3001/0340 STEP NO--UR/0126/70/029/003/0657/0659
CIRC ACCESSION NO--AP0126096
UNCLASSIFIED

2/2 038

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0126096

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE STUDY WAS CARRIED OUT WITH THE ALLOY NI, AL 1.18 PERCENT HAVING GRAIN SIZE 0.4-1.5 MM, WHICH WAS IRRADIATED WITH AN INTENSITY OF 50-90 W-CM PRIME2, USING THE METHOD DESCRIBED BY G. YA. K. AND V. A. K. (1966). THE RATE OF CREEP WAS DETD. AT 100-300 HR. SPECIMENS SUBJECTED TO THERMOMECH. TREATMENT AT 800 DEGREES WERE USED AS CONTROLS, AND THESE SHOWED SEVERAL TIMES HIGHER DEFORMATION RATES THAN THOSE IRRADIATED WITH ULTRASOUND. THE INTENSITY OF THE ULTRASONIC IRRADN. HAD PRACTICALLY NO EFFECT ON THE DEGREE OF CREEP RATE DECREASE OF IRRADIATED SPECIMENS; HOWEVER, THE DURATION OF IRRADN. HAD AN EFFECT, AT 5-7 MIN THE STRENGTHENING OF THE ALLOY REACHED A MAX. THE OBSD. EFFECTS ARE EXPLAINED BY THE FORMATION OF A DIFFERENT SUBSTRUCTURE IN IRRADIATED SPECIMENS THAN IN DEFORMED AND ANNEALED SPECIMENS. FACILITY: INST. METALLOFIZ., KIEV, USSR.

UNCLASSIFIED

DEMCHENKO, N.

ECDS

Source: JPRS 53335
10 June '71

IMPROVEMENT IN PRODUCTION SPECIALIZATION UNDER
[Article by Doctor of Economic Sciences N. Demchenko, "The Strategy of
Production", Moscow, Sovetskoye Mashinostroyeniye, Russian, 13 May 1971,
p. 3]

Specialization and cooperation play an important part in raising
the technical level and efficiency of production. That is why great
importance is attached to the development of those forms of organization
of the activity of enterprises and sectors in the main five-year plan.
The directives of the 24th Congress determined the following: "to
improve the structure of production and inter- and intra-sectoral
proportions and to expand the specialization and cooperation of production."

Specialization is based on the public division of labor. Its essence
is that the manufacture of various products of labor is separated in
independent industrial sectors and in their enterprises and that there
is an exchange of the products turned out. For example, the production
of cast iron, steel, and rolled metal products is separated in metal-
lurgical plants, while the production of various machines (including for
ferrous metallurgy) is concentrated in machinebuilding plants. Owing to
the concentration of the manufacture of structurally and technologically
uniform output in specialized enterprises, it is possible to greatly
increase the scale of output and to shift to its mass or large-scale
production with much smaller expenses. At the same time, enterprises
are created for the application of highly productive machines and methods
and advanced manufacturing techniques and for an improvement in labor
organization.

The maximum possible development of cooperation is of great import-
ance for an increase in the efficiency of public production. Such a form
of communication emerges among specialized enterprises when jointly
manufacture some product of labor. Without cooperation it is difficult
to visualize modern industry. Even such major motor-vehicle plants as
ZIL, GAZ, the Plant named Leninitsky Komsomol, and so forth do not have
"substance farming." They receive from suppliers motors, gears, wheels,
radiators, transmissions, pinions, motor-vehicle pistons and rings, as

Aceto zero four answers to the question of how to hasten the movement of new equipment from the drawing boards of the designer to the plant conveyor. Such an attitude is stipulated by the demands of the 24th Party Congress, in the records of which it is especially emphasized that fulfillment of plans for new equipment must become the most important criterion for evaluating the activity of ministries and enterprises. But if we look at the present position, then, unfortunately, as in the example of the USSR Ministry of Tractor and Agricultural Machine-Building, work on creating machines of improved design is still being organized and directed poorly. Agricultural workers are awaiting coordinated activity from interested ministries and departments, USSR Gosplan, and the State Committee for Science and Engineering that would hasten the creation of new machines, which are needed by the farmlands so much.

11,004
CSO: 1821-S

USSR

UDC 661.184

YAROSHENKO, N. A., DEMCHENKO, P. A., FESHCHENKO, N. G., and IRODIONOVA, A. F.,
Institute of the Chemistry of High-Molecular Compounds, Academy of Sciences
UkrSSR, and Institute of Organic Chemistry, Academy of Sciences UkrSSR

"The Surface Activity of Alkylphosphonic Acids and of Their Sodium Salts in
Aqueous Solutions at Various Temperatures"

Kiev, Ukrainskiy Khimicheskii Zhurnal, Vol 19, No 9, Sep 73, pp 895-899

Abstract: The isotherms in the 20-90° range of the surface tension of aqueous
solutions of the alkylphosphonic acids $RP(O)(OH)_2$ ($R = C_8, C_9, C_{10}, C_{12}, C_{16}$)

at various concentrations and also of their acidic and neutral Na salts were
determined. The neutral and acidic salts had a surface activity that was twice
as high and five-six times as high, respectively, as that of Na salts of
alkylcarboxylic acids $RCOOH$ ($R = C_8-C_{16}$). The surface activity increased in
the order $RP(O)(ONa)_2 < RP(O)(OH)ONa < RP(O)(OH)_2$. The tendency of the last
two members of this series to form intermolecular hydrogen bonds increased
their surface activity. Because of the more pronounced metallic characteristics
of P as compared with C or S, the compounds $RP(O)(OH)_2$ and $RP(O)(OH)ONa$ had a
high surface activity which decreased to a relatively slight extent with increasing
temperatures of their solutions. This decrease was particularly small for
 $R = C_{12} - C_{16}$ and became somewhat greater for $R = C_8 - C_{10}$.

1/1

USSR

UDC 661.185.1

DEMCHENKO, P. A., and YAROSHENKO, N. A., Institute of the Chemistry of High Molecular Compounds, Academy of Sciences UkrSSR, Kiyev

"Solubilization of Trialkylphosphine Oxides in Aqueous Solutions of Sodium Dodecyl Sulfates"

Moscow, Kolloidnyy Zhurnal, Vol 35, No 4, Jul-Aug 73, pp 751-753

Abstract: The solubilization ability of the oxides of symmetrical aliphatic tertiary amines in aqueous sodium dodecyl sulfate solutions of various concentrations has been investigated. An assumption has been made about a mixed type of their solubilization in mycellar solutions. With increasing oleophilic properties the solubilization of phosphine oxides occurs mainly by the nonpolar mechanism. Addition of sodium sulfate to the aqueous solution of sodium dodecyl sulfate increases its solubilization ability in respect to the dodecyl-, decyl-, and hexadecyl-phosphine oxides, but decreases it in case of octylphosphine oxide.

1/1

USSR

UDC: 681.185.224

YAROSHENKO, N. A., ~~DEMCHENKO, P. A.~~, TANCHUK, Yu. V., Institute of Chemistry of High-Molecular Compounds, AS UkrSSR

"Synthesis of Ammonium Monoalkyl Pyrophosphates"

Leningrad, Zhurnal Prikladnoy Khimii, Vol 45, No 5, May 72, pp 1114-1115

Abstract: New phosphorus-containing surface-active agents were synthesized by reacting higher aliphatic alcohols with pyrophosphoric acid. Octyl, decyl, dodecyl, tetradecyl, hexadecyl and octadecyl esters of pyrophosphoric acid were synthesized. Ammonia neutralization of these esters yielded triammonium salts of monoalkyl pyrophosphates. It was found that these salts are effective surface-active agents: an increase in the number of carbon atoms in the radical from 8 to 18 reduces the minimum surface tension at 60°C from 24.3 to 21.8 ergs/sq. cm.

1/1

USSR

UDC 541.132.3

DEMCHENKO, P. A., and YAROSHENKO, N. A., Institute of the Chemistry of High Molecular Weight Compounds, Acad. Sc. UkrSSR

"Concentration Constants of the Ionization of Alkylphosphonic Acids"

Kiev, Ukrainskiy Khimicheskii Zhurnal, Vol 38, No 4, Apr 72, pp 359-362

Abstract: Solubility and ionization constants of the C₈-C₁₆ alkylphosphonic acids were determined in a study of the effect of ionization constants on the transition from real solutions to the colloidal state. It was shown that the pK₁ values range from 3.2 to 4.2, while pK₂ remain constant. Temperature changes affect the pK₂ values more than pK₁. Even though pK₂ values of the higher analogs are constant at the lower end they are directly related to the chain length; this is due to the fact that addition of methyl groups to a short chain acid increases its electronegativity, but as the chain becomes longer, this inductive effect diminishes. The decrease in acid strength with increased radicals is due to the entropy effect, which is more pronounced at the second stage of neutralization. Solubility of these acids increases slowly with temperature increase until a certain temperature is reached above which the solubility increase becomes more pronounced. The Kraft points

1/2

USSR

DEMCHENKO, P. A., and YAROSHENKO, N. A., Ukrainskiy Khimicheskiy Zhurnal, Vol 38, No 4, Apr 72, pp 359-362

range from 15 to 35° and this is where increased solubility is observed due to the formation of colloidal ions. Critical concentrations of colloidal ions formation of the C₈, C₉, C₁₀ and C₁₂ acids are 0.6; 0.58; 0.37; and 0.26 g/l respectively.

2/2

- 21 -

USSR

UDC 621.791.048.045:771.8

TSYGAN, B. G., YEMELIN, V. F., and DEMCHENKO, V. G., "Khimash" Plant, Pavlograd;
and TERESHCHENKO, M. P., Dnepropetrovsk

"Automatic Two-Layered Steel Welding with Metallic Powder"

Kiev, Avtomaticheskaya Svarka, No 6, Jun 70, pp 43-45

Abstract: A welding procedure has been developed which results in welding seams with high mechanical and anti-corrosive properties. PZh-1M and PZh-2M metallic powders are used as the auxiliary material. Essentially, the method involves making a Y-shaped division of the seam edges and filling the division with metal powder before the usual automatic welding process is done. The metallic powder is obtained by the method of reducing iron from slag. To prevent the formation of pores, it is best to use a wire of the Sv-08G2S type. Before the welding, the metallic powder must be cleansed of its impurities and dried at 350-400°C for 1.5-2.0 hours. Microphotographs of welding seams made by this method are shown, and a table gives various data relating to the method.

1/1

- 100 -

USSR

UDC: 538.566

DEMCHENKO, V. V., DOLGOPOLOV, V. V., and OMEL'CHENKO, A. Ya.

"Effect of a High-Frequency Potential on the Distribution of Fast TM Waves Along a Plasma Layer"

Kiev, Ukrainskiy Fizicheskiy Zhurnal, vol 17, No 2, 1972, pp 203-209

Abstract: The authors, members of the Physico-technical Institute of the Ukrainian SSR Academy of Sciences in Kharkov, theoretically investigate the effect of a high-frequency potential on fast TM wave distribution when a plane-parallel plasma layer is placed between ideally conducting plates. The case of high amplitudes, in which the pressure of the high-frequency field is much greater than the gas kinetic plasma pressure, is considered. Expressions are obtained for the dielectric permeability at the plasma-vacuum interface and for the dispersion. A connection between the frequency of the TM wave and the wave number is found. The opposite case for low amplitudes, when the high-frequency field pressure is much lower than the plasma gas kinetic pressure, is also investigated. It is found that while the electromagnetic field

1/2

USSR

DEMCHENKO, V. V., et al., Ukrainskiy Fizicheskiy Zhurnal, Vol 17, No 2, 1972, pp 203-209

does not penetrate the plasma due to the skin effect, in the linear approximation the high-frequency field may result in such penetration. Acknowledgment of the assistance of K. N. Stepanov is given.

2/2

- 75 -

USSR

UDC 533.951

DEMCHENKO, V. V. and STEPANOV, K. N.

"Nonstationary Phenomena During the Excitation of Low-Frequency Oscillations in a Plasma Cylinder"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol XLI, No 8, 1971, pp 1755-1758

Abstract: The present article is an investigation of the non-stationary processes of excitation of slowly decaying Alfvén waves (ionic-cyclotron waves) and rapid magneto-sonic waves (helicon waves) that occur in an infinite plasma cylinder when external currents are switched on in a finite-length coil that has been put on the cylinder. It was established that when the external currents have the form of a traveling wave, the following three types of oscillations occur in the plasma under the coil:

- 1) purely forced oscillations whose frequency and wave vector coincide with those of the external currents;
- 2) natural oscillations whose frequency and damping constant coincide with the natural frequency and damping constant of the natural oscillations of the plasma cylinder. Their wave vector is that of the external currents. These oscillations die down as $t \rightarrow \infty$;

1/2

- 69 -

USSR

DEMCHENKO, V. V. and STEPANOV, K. N., Zhurnal Tekhnicheskoy Fiziki, Vol XLI, No 8, 1971, pp 1755-1758

3) Natural oscillations which do not die down as time passes. Their axial wave number and attenuation factor coincide with those of the natural oscillations of the plasma, and their frequency is equal to the frequency of the external currents. These oscillations represent a superposition of the waves traveling parallel to and antiparallel to the magnetic field, and their amplitudes subside upon withdrawal from the ends of the coil. When the damping is sufficiently great or the coil is sufficiently long, their amplitudes are exponentially small, and these oscillations may be ignored.

The article concludes by pointing out how the results may be extended to the case of external currents of an arbitrary form.

1/2 032 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--PROPAGATION OF LARGE AMPLITUDE ELECTROMAGNETIC WAVES ALONG A
NONLINEAR DIELECTRIC LAYER -U-
AUTHOR--DEMCHENKO, V.V.
COUNTRY OF INFO--USSR
SOURCE--UKRAINS'KII FIZICHNII ZHURNAL, VOL. 15, APR. 1970, P. 532-537
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--ELECTROMAGNETIC WAVE, DIELECTRIC LAYER, WAVE PROPAGATION,
DISPERSION EQUATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/1327 STEP NO--UR/0185/70/015/000/0532/0537
CIRC ACCESSION NO--AP0124977

UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0124977

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION OF THE PROPAGATION OF LARGE AMPLITUDE ELECTROMAGNETIC WAVES ALONG A PLANE PARALLEL LAYER OF A NONLINEAR DIELECTRIC. DISPERSION EQUATIONS ARE DERIVED, TOGETHER WITH EXPRESSIONS FOR THE FIELDS AND FOR THE PERMITTIVITY VARYING ALONG THE DEPTH OF THE LAYER. IN THE LARGE AMPLITUDE APPROXIMATION CONSIDERED, THE DISPERSION EQUATIONS DO NOT DEPEND ON THE WAVE AMPLITUDE. IT IS SHOWN THAT IN THE CASE OF ELECTRIC WAVES THE PROPAGATION OF ASYMMETRICAL WAVES IS POSSIBLE WHEN THE FIELDS AND THE PERMITTIVITY AT ONE FACE OF THE LAYER DIFFER FROM THOSE AT THE OTHER FACE. FACILITY: KHARKIVS'KII DERZHAVNII UNIVERSITET, KHRKOV, UKRAINIAN SSR.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--LUMINESCENT STUDY OF CONFORMATIONAL TRANSITIONS IN CHYMOTRYPSIN -U-
AUTHOR-(C2)-DEMCHENKO, V.V., NIKITIN, A.N.
COUNTRY OF INFO--USSR
SOURCE--ZH. FIZ. KHIM. 1970, 44(3), 781-4
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY
TOPIC TAGS--TRYPSIN, FLUORESCENCE SPECTRUM, TEMPERATURE TEST, HYDROGEN ION
CONCENTRATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/0284 STEP NO--UR/0076/70/044/003/0781/0784
CIRC ACCESSION NO--AP0134089
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0134089

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. TEMP. AND SUBP H DEPENDENCES OF CONFORMATIONAL TRANSITIONS IN CHYMOTRYPSIN WERE STUDIED. THE TRANSITION REGION WAS CHARACTERIZED BY SHARP DISPLACEMENT OF THE MAX. WAVELENGTH OF LUMINESCENCE, AND BY A DECREASE OF ITS INTENSITY. THE LUMINESCENCE MEASUREMENTS ENABLED CALC. OF ACTIVATION ENTROPY, AND ENTHALPY OF DENATURATION OF CHYMOTRYPSIN BY UREA. THE IONIZATION CONSTS. OF ACTIVE CENTER GROUPS DURING HYDROLYSIS OF P NITROPHENYL ESTER OF DL PHENYLALANINE BY CHYMOTRYPSIN WERE STUDIED.

UNCLASSIFIED

USSR

UDC 632.96

TIMOFEYEVA, O. A., SHVARTSMAN, G. A., and DEMCHENKO, YE. P.

"Gas Chromatographic Determination of γ -hexachlorocyclohexane and p,p'-DDT in Grapes, Wine, Water and Juice"

V sb. Novyye metody tekhnol. i kontrolya konservn. i vinodel'ch. proiz-va (New Methods of Technology and Inspection in the Canning and Distillery Industry -- collection of works), Kishinev, "Shtintsa", 1972, pp 120-124 (from RZh-Khimiya, No 22, Nov 72, Abstract No 22N415)

Translation: A chromatograph with tritium detector is used for determining re idual quantities of γ -hexachlorocyclohexane and p,p'-DDT in grapes and products processed from grapes. The column is charged with 10% SE-30 on chromosorb W. The temperature of column, vaporizer and detector 230, 260, 160°C. Rate of argon flow 65 ml/min. The authors investigate the conditions of isolation of the given insecticides from the specimens to be analyzed, methods of purifying the resultant extracts, and the basic parameters of gas chromatographic analysis. For liquid products, the best results are given by predistilling the hexachlorocyclohexane and DDT with steam, followed by extraction with n-hexane. For grapes, direct extraction is used followed by purifying the extract with concentrated sulfuric acid. Extraction of insecticides
1/2

USSR

TIMOFEYeva, O. A., et al., V sb. Novyye metody tekhnol. i kontrolya konservn. i vinodel'ch. proiz-va, Kishinev, "Shtintsa", 1972, pp 120-124

from specimen comes to 85-95%. The method can be used to determine 0.2 μ g of hexachlorocyclohexane and 1 μ g of DDT in 1 liter (kg) of a specimen when 100 ml (g) is subjected to analysis. The time of analysis of liquid products is 1.5 hours, and the time for grapes is 2-2.5 hours. T. A. Belyayeva.

2/2

DEMCHENKOVA, G. Z.

Industrial Hygiene

SO: JPAS 55204
16 FEB 72

UDC: 658.382.2(082)(049.3)

PROCEEDINGS OF A CONFERENCE ON MEDICAL AND SANITARY SERVICES FOR INDUSTRIAL WORKERS

[Book* review by G. Z. Demchenko, candidate of medical sciences (Moscow); Moscow, Sovetskoye Zdorov'ye, Russian, No 1, 1972, pp 77-79]

The data in this collection deal with social and organizational problems in medical and sanitary services to Moscow workers, and with problems in industrial hygiene, overall and occupational morbidity referable to industrial enterprises.

The book touches upon many aspects of organizing medical care and social security, it discusses the activities of therapeutic and prophylactic, and sanitary-epidemiological institutions with regard to further improvement of working and living conditions, medical care for industrial workers, construction sites, and transportation in the capital.

The main tasks confronting public health agencies and institutions for the immediate future, in the light of the decisions of the Party and Government, were defined in the article by Professor I.D. Bogatyrev. Stressing the need to initiate a broad set of sociohygienic and economic measures for labor protection and safety measures, prevention of occupational diseases and injuries, lowering temporary and lasting disability, the author observes that the stoutest strides in organizing therapeutic and preventive care for industrial workers were obtained in those areas where such care is provided on the industrial principle, on the basis of shop districts. In the opinion

Materially Moskowsky Gorodskoy Vrachebnoy Nauchno-prakticheskoy Konferentsii po Meditsine i Sanitarii Obeluzhivaniyu Promyshlennyykh Rabochikh (12-13 Marta 1970 g.) [Proceedings of the Moscow Municipal Theoretical and Practical Conference of Physicians on Medical and Sanitary Services to Industrial Workers (12-13 March 1970)], edited by V.I. Vodyanova, Main Administration for Public Health, Moscow Municipal Executive Committee, Sanitary and Epidemiological Station of Moscow, Moscow Central Municipal Expert Commission for Evaluating Disability, Moscow, 1970, 83 pp.

- 60 -

1/2 023 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--EFFECT OF PRESSURE ON THE EFFECTIVE MASS OF ELECTRONS IN INDIUM
ARSENIDE -U-
AUTHOR-(03)-DEMCHUK, K.M., TSIDILKOVSKIY, I.N., RODIONOV, K.P.
COUNTRY OF INFO--USSR **D**
SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(5), 997-1000
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--INDIUM ARSENIDE, ELECTRON STRUCTURE, MODEL, SINGLE CRYSTAL,
ELECTROMOTIVE FORCE, HALL EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3003/0145

STEP NO--UR/0449/70/004/005/0997/1000

CIRC ACCESSION NO--AP0129401

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0129401

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INFLUENCE OF HYDROSTATIC PRESSURE (P IS SMALLER THAN OR EQUAL TO 12 KILOBARS) ON THE EFFECTIVE MASS OF THE ELECTRONS AT SIMILAR TO 95 DEGREES K WAS MEASURED IN 20 TIMES 3 TIMES 2.5 MM SPECIMENS OF SINGLE CRYSTAL N INAS WITH CARRIER CONCS. OF 3.7×10^{16} MINUS 6.2×10^{17} CM⁻³. THE EFFECTIVE MASS WAS DETD. FROM MEASUREMENTS OF THE THERMAL EMF. AND OF THE HALL EFFECT IN STRONG MAGNETIC FIELDS (H IS SMALLER THAN OR EQUAL TO 20 KOE). A THEORETICAL MODEL BASED ON THE 2 BAND APPROXN. BY E. O. KANE (1957) DESCRIBES THE EXPTL. DATA WELL. FACILITY: INST. FIZ. METAL., SVERDLOVSK, USSR.

UNCLASSIFIED

USSR

UDC: 535.37

VOLOD'KO, L. V., DEMCHUK, M. I., SEVCHENKO, A. N., ZAZHOGIN, A. P.,
and CHERNYAVSKIY, A. F.

"Investigating the Statistical Method for Recording the Laws of
Luminescence Scintillation"

Minsk, Zhurnal Prikladnoy Spektroskopii, vol 16, No 6, 1972, pp
1001-1007

Abstract: The purpose of this paper is to further the development of physical investigation of the processes accompanying luminescence by looking into a better method for statistically recording the laws of luminescence scintillation in the time range of 10^{-9} to 10^{-5} sec, in which there are no principal defects as in the stroboscopic method or in the method of synchronous photon counting. The basic idea of this superior method was first considered in an earlier paper published in this same journal by some of the authors listed above (A. F. Chernyavskiy, et al, 13, 1970, p 840). The present paper gives the results of a thorough investigation into the method and describes an experimental device for investigating luminescence. A block diagram of the device is given and its operation explained. It is found that this method is useful in a practically unlimited range of luminescence intensity and has high resolving power and low error.

1/1

USSR

UDC 622.24.053.6

MEL'NIKOV, V. I., ZHIDOVTSSEV, N. A., LEVCHENKO, A. T., STARKOV, V. N.,
DEMCHUK, M. M., KOVAL'CHUK, P. P., and PODOBANYI, I. F.

"Test Results of a Wave Reflector"

Moscow, Bureniye -- Referativnyy Nauchno-Tekhnicheskiy Sbornik (Drilling --
Scientific and Technical Reference Collection of Works), No 1, 1973, pp 7-11

Abstract: Results are presented of tests conducted on a special arrangement of the bottom part of a drilling column, which possesses the capacity of reflecting the vibratory energy generated by the cutting bit. This arrangement, which constitutes an independent structure, is called a superbit wave reflector. The basic configurations of the design and operation of the reflector are described. The existence of the theoretically calculated resonance regime and antiresonance regime was confirmed experimentally. Results of operational tests demonstrated an improvement of drilling parameters in hard rock as a result of application of the reflector. 3 figures, 1 table, 2 references.

1/1

- 66 -

1/2 025 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--SEALING OF APPARATUS FOR THE VAPOR TREATMENT OF A FIBER -U-
AUTHOR--(02)-NAZAROV, V.F., DEMEKHINA, N.I.
COUNTRY OF INFO--USSR
SOURCE--KHIM. VOLOKNA 1970, (3), 48-50
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--TEXTILE INDUSTRY MACHINERY, SYNTHETIC FIBER, GAS STATE

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605012/C10 STEP NO--UR/0183/70/000/003/0048/0050
CIRC ACCESSION NO--AP0140276
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140276

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTS OF VARYING CONSTRUCTIONAL PARAMETERS (E.G. DIMENSIONS AND NO. OF CHAMBERS, DISTANCE BETWEEN PARTITIONS, LENGTH OF THE CHANNEL) ON VAPOR LEAKAGE WERE STUDIED FOR THE SEALED PARTITIONS OF A MULTIPLE CHAMBER APP. FOR VAPOR TREATMENT OF FIBERS. FLAT PARTITIONS SEEMED SOMEWHAT PREFERABLE TO CONICALLY SHAPED ONES; 8-12 PARTITIONS GAVE LESS LEAKAGE THAN APP. WITH FEWER PARTITIONS. THE LENGTH OF THE CHANNEL PRACTICALLY DID NOT INFLUENCE THE DEGREE OF SEALING. THE HYDRAULIC STRENGTH OF THE APP. WAS IMPROVED BY DECREASING THE LENGTH OF EACH CHAMBER AND INCREASING THEIR NO.

UNCLASSIFIED

Polymers and Polymerization

USSR

UDC 678.06-419.8:677.521

GOLUBENKOVA, L. I., DEMEKHINA, YE. M., CHIBISOVA, YE. I., and NIKONOVA, S. N.

"Cements for Plexiglas Based on Epoxy-Novolak Resins"

Moscow, Plasticheskiye Massy, No 4, 1973, pp 12-14

Abstract: The strength characteristics of the bonding resins 6EN and 18EN were determined. These compounds contain 18-22% epoxy groups and have a drop depression temperature of 60-70°C. Addition of anilinephenol formaldehyde resin (211) to both 6EN and 18EN significantly improved the properties. The strength characteristics for both resins are similar and rather high at room temperature and up to about 200°C. However, the resin 6EN+211 is better suited to technical applications because impregnation of the plexiglass by the resin results in only a small change in the properties of the plexiglass.

1/1

USSR-

UDC 678.643.01:53

COLUBENKOVA, L. I., ~~DEMEKHINA, YE. M.~~, CHIBISOVA, YE. I., SMIRNOVA, L. N., EKSANOVA, N. D., and YUDIN, V. F.

"Binders for Fiberglass-reinforced Plastics Based on Epoxy Resin ETF"

Moscow, Plasticheskiye Massy, No 6, 1970, pp 13-15

Abstract: In order to increase the thermostability of fiberglass-reinforced plastics, work is being done to create binders based on epoxy resins which differ in structure from diene resins, primarily cycloaliphatic and polyfunctional epoxy resins. Polyfunctional resin ETF, which is the product of the interaction of 1,1,3-tri-(hydroxy-phenyl)-propane and epichlorohydrin, has a molecular weight of 540-700 and contains 20-24 percent epoxy groups. Hardening of this resin with amine or acid hardeners makes it possible to obtain specimens possessing higher thermostability than diene epoxy resins. The greatest bending strength is found in specimens hardened with aniline-phenol-formaldehyde resin 211, the greatest compression strength in specimens hardened with maleic anhydride. Aniline-phenol-formaldehyde

1/2

USSR

GOLUBENKOVA, L. I., et al., *Plasticheskiye Massy*, No 6, 1970, pp 13-15

resin 211 was chosen as the main hardener. The binder representing a composite of resins ETF and 211 has been given the brand designation T-71-S. Since resin ETF softens in the 35-55° C range, it can be used for the "dry" process of fiberglass-reinforced plastics manufacture. The properties of the binder applied to the glass cloth, as well as of the resultant fiberglass-reinforced plastics depend on the character of the solvent used to impregnate the glass filler and the storage conditions for the impregnated cloth.

2/2

- 7 -

USSR

UDC: 519.2

DEMENIN, A. N.

"On Some Expansions of Probabilistic Measures and Their Use in Applied Problems"

V sb. Nekotor. probl. prikl. mat. (Some Problems of Applied Mathematics--collection of works), vyp. 5, Kiev, 1971, pp 186-192 (from RZh-Kibernetika, No 1, Jan 72, Abstract No 1V72)

Translation: The author considers some expansions of probabilistic measures in functional spaces. Two theorems are formulated on representation of the characteristic functional of one non-Gaussian measure in the form of an integral with respect to another measure. The results can be used in problems which arise in nonlinear transformations of random processes. Yu. Davydov.

1/1

USSR

UDC 669.71.41

PIMENOV, Yu. P., DANILKIN, V. A., DEMENKOV, A. I.

"Sampler for Taking of Sample From Aluminum Melts for Determination of Hydrogen Content by Vacuum Extraction Methods"

Tekhnol. Legkikh Splavov. Nauchno-Tekhn. Byul. VILSa [The Technology of Light Alloys, Scientific and Technical Bulletin of the All-Union Institute of Light Alloys], 1970, No. 6, pp. 94-97. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G168 by S. Krivonosova).

Translation: It is recommended that the copper mold be replaced by a sampler, allowing samples to be taken directly from the melt bath without significant disruption of the oxide cover, with high accuracy of sampling point (≈ 15 mm), production of a specimen ready for lathe processing, and more complete fixation of H_2 in the specimen. A rubber bulb is used to create rarefaction in the sampler. A quartz tube is then placed in the melt and the metal is drawn up into the cylindrical channel of a copper body, in which it crystallizes rapidly. The sampler has been used to produce specimens, the gas content of which corresponded to the solubility of H_2 in liquid Al at the sampling temperature with a partial pressure $P_{H_2}=1$ atm. The theoretically limiting concentration of H_2 was determined in the Al. 2 figs; 2 tables.

1/1

USSR

UDC 541.183

SVETLOV, A. K.; DEMENKOVA, T. N., TSVETKOV, YU. S., NESTEROVA, O. M., and KRYUCHKOV, V. V.; Kuzbas Polytechnical Institute

"The Effect of the Structure of Ion Exchange Resin on the Process of Ion Exchange Sorption"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 46, No 10, Oct 72, pp 2596-2598

Abstract: The effect of the structure of ion exchange resins on the process of dye sorption in aqueous and organic media has been investigated. It was shown that the maximum adsorption value is obtained in monoporous samples with total pore volume of $0.8 \text{ cm}^3/\text{g}$, and individual pore dimensions of $4.5\text{-}5.5 \text{ \AA}$, due to uniform accessibility of the granular structure. Maximum adsorption of rhodamine 6Zh by the cation exchange resin KU-2 occurs in acetone solution; sodium eosine is most effectively absorbed by the anion exchange resin AV-17 from aqueous solutions. It has been noted that the anion exchange resin AV-17 in the OH form shows a higher sorptive ability than in the chloride form.

1/1

- 29 -